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10/524,291	09/22/2005	Hermann Goebels	037068.55856US	6376

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EXAMINER

NGUYEN, VU Q

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/524,291	Applicant(s) GOEBELS ET AL.	
	Examiner VU Q. NGUYEN	Art Unit 3683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/11/2007 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13-22, 24, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over UK Patent Document GB 2270130 (UK '130 reference) in view of U.S. Patent No. 6371573 (Goebels et al.).

Regarding claim 13, the UK '130 reference discloses in Fig. 2a, a pressure regulator module (100) for a vehicle pneumatic braking system for a wheel-slip-dependent controlling or regulating of braking pressures applied to two separate working connections (18, 19), the pressure regulator module (100) comprising: a two-

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way valve assembly (1) having two conduits (left and right sides of valve assembly 1), including one relay valve (3, 4), respectively, for each conduit, each relay valve (3, 4) having a control input (5); wherein a respective solenoid control valve (30, 30') (in the form of a proportional valve) is assigned to the control input (5) of each relay valve (3, 4); wherein the solenoid control valves (30, 30'), together with only one additional inserted solenoid control valve (12) coupled on an input side of the module (100), connect the control input (5) of the respective relay valve (3, 4) with at least one of a bleeding system (11, 11'), a control pressure (13, 14), and a compressed-air reservoir (17); a controlling and regulating unit (2) operatively configured to control the inserted solenoid control valve (12) to connect the control input (5) of the respective relay valve (3, 4) with the compressed air reservoir (17) (when valve 12 is in an energized position) for adapting the speed of rotation of a driven wheel, which initially slips during acceleration, to the speed of rotation of a non-slipping wheel.

Regarding claim 13, the UK '130 reference does not disclose expressly that the respective solenoid control valves (30, 30') are in the form of a 3/2-way valve having two switching positions; and the solenoid control valve (30 or 30') assigned to a slipping wheel is controlled in a timed manner depending on the slip rate of the slipping wheel and a change in velocity of said slipping wheel, whereby the solenoid control valve (30 or 30') assigned to the slipping wheel is alternatively switched back and forth between a pressure buildup position and a pressure reduction position. Instead, the respective solenoid control valves (30, 30') are in the form of proportional valves having continuously changing positions.

Regarding claim 13, Goebels et al. disclose in Fig. 7, the use of a solenoid control valve (55), in the form of a 3/2-way valve having two switching positions, assigned to the control input of a relay valve (57). Goebels et al. further disclose that the solenoid control valve can be controlled in a timed manner depending on the slip rate of a slipping wheel and a change in velocity of the slipping wheel (see Figs. 1, 3-5), whereby the solenoid control valve is alternatively switched back and forth between a pressure buildup position and a pressure reduction position (column 5, lines 1-17).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the proportional valves of the valve assembly taught by the UK '130 reference with 3/2-way valves as taught by Goebels et al. The suggestion/motivation for doing so would have been to utilize a less-expensive way of increasing, reducing, and holding pressure. Furthermore, 3/2-way valves are easier to control because they only have two switching positions, whereas proportional valves have continuously changing positions (current is varied in an analog manner as opposed to digital). Since 3/2-way valves are capable of increasing pressure, reducing pressure, and holding pressure by alternatively switching back and forth between a pressure buildup and pressure reduction position as taught by Goebels et al. (abstract; column 5, lines 1-17; column 7, line 22 - column 8, line 41), 3/2-way valves are capable of functioning in a similar manner to the proportional valves taught by the UK '130 reference. Thus, it would have been obvious to a person of ordinary skill in the art to use 3/2-way valves, which are cheaper and easier to control, instead of proportional valves. Furthermore, one of ordinary skill in the art would control the 3/2-way valves in

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a proper manner by switching valve positions in a timed manner, as taught by Goebels et al., in order to effectively perform a desired wheel slip control.

Regarding claim 14, see the UK '130 reference and Fig. 2a, as well as page 11, last paragraph.

Regarding claim 15, see Goebels et al. and disclosure that, in a non-energized normal position, the solenoid control valve (55) switches a control pressure (54) through to a control input of the relay valve (57) and, in an energized position, switches the control input of the relay valve (57) through to a bleeding system (53) (Figs. 6 and 7; column 7, line 22 - column 8, line 41).

Regarding claim 16, see Goebels et al. and disclosure of the solenoid control valve (55) having a pressure buildup position (non-energized) and a pressure reduction position (energized). The solenoid control valve (55) can also hold a pressure at a brake cylinder (59) by alternately switching back and forth in the pressure buildup position (non-energized) and the pressure reduction position (energized) under the control of an electronic controlling and regulating unit (19) (abstract; column 5, lines 1-17; column 7, line 22 - column 8, line 41).

Regarding claims 17-19, see the UK '130 reference and Fig. 2a.

Regarding claim 20, see the UK '130 reference and Fig. 2a.

Regarding claim 21, see the UK '130 reference and page 12, last paragraph - page 14, first new paragraph.

Regarding claim 22, see the UK '130 reference and Fig. 2a, where the outer border of pressure regulator module 100 schematically indicates that valve assembly 1, and thus the only one additional solenoid control valve 12, is integrated in a housing.

Regarding claim 24, see the UK '130 reference and Fig. 2a.

Regarding claim 26, since claim 26 does not introduce any substantially new limitations, claim 26 is rejected for at least the same reasons as set forth above for claim 13.

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over UK Patent Document GB 2270130 (UK '130 reference) in view of U.S. Patent No. 6371573 (Goebels et al.) as applied to claims 13-22, 24, and 26 above, and further in view of UK Patent Document GB 2136521 (UK '521 reference).

The UK '130 reference and Goebels et al. disclose a pressure regulator module and the use of 3/2-way valves as solenoid control valves respectively, as applied to claims 13-22, 24, and 26 above.

Regarding claim 23, the UK '130 reference or Goebels et al. do not disclose expressly that the only one additional solenoid control valve (12) is arranged outside a housing accommodating the remaining valve assembly (1) consisting of the two relay valves (3, 4), and the assigned solenoid control valves (30, 30'), and is constructed to be connectable to this valve assembly (1).

The UK '521 reference discloses in Fig. 2, a solenoid control valve (25) arranged outside a housing accommodating a valve assembly (42, 7, 8), and is constructed to be connectable to this valve assembly (42, 7, 8).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the valve assembly taught by the UK '130 reference so that the only one additional solenoid control valve is arranged outside the housing accommodating the remaining valve assembly as taught by the UK '521 reference. The suggestion/motivation for doing so would have been to allow easier access to the only one additional solenoid control valve. Furthermore, since the valve assembly taught by the UK '130 reference is merely depicted as a schematic diagram, it would be obvious to one of ordinary skill in the art to simply re-locate or move components to desirable locations, as seen in the UK '521 reference, as long as electrical and mechanical connections are kept intact.

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over UK Patent Document GB 2270130 (UK '130 reference) in view of U.S. Patent No. 6371573 (Goebels et al.) as applied to claims 13-22, 24, and 26 above, and further in view of U.S. Patent No. 6264289 (Franke et al.).

The UK '130 reference and Goebels et al. disclose a pressure regulator module and the use of 3/2-way valves as solenoid control valves respectively, as applied to claims 13-22, 24, and 26 above.

Regarding claim 25, the UK '130 reference or Goebels et al. do not disclose expressly that an acceleration sensor is provided for detecting a lateral acceleration, which sensor is integrated in the electronic controlling and regulating unit.

Franke et al. disclose in Fig. 3, a vehicle braking system comprising an electronic controlling and regulating unit (41), in which an acceleration sensor (10; see Fig. 1) for detecting a lateral acceleration, is integrated in the electronic controlling and regulating unit (41) (column 4, lines 47-52).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the electronic controlling and regulating unit taught by the UK '130 reference so that it is integrated with an acceleration sensor for detecting lateral acceleration as taught by Franke et al. The suggestion/motivation for doing so would have been to provide lateral acceleration data for better control. Furthermore, integrating the acceleration sensor in the electronic controlling and regulating unit would further provide a unitary configuration that represents economic and space-saving solutions, as taught by Franke et al. (column 5, lines 32-36).

Response to Arguments

Applicant's arguments filed 12/11/2007 have been fully considered but they are not persuasive.

Applicant's arguments with respect to the embodiment shown in Fig. 1 of the UK '130 reference are considered moot because the Examiner does not rely on the embodiment shown in Fig. 1. As discussed in the rejection above, the Examiner relies

on the embodiment shown in Fig. 2a of the UK '130 reference. Although it appears that the UK '130 reference does not expressly disclose the details of exactly how wheel slip control is carried out with reference to Fig. 2a, the Examiner submits that the structure shown in Fig. 2a is at least capable of carrying out wheel slip control and must be controlled in some manner by controlling and regulating unit 2.

The Examiner submits that in Fig. 2a of the UK '130 reference, controlling and regulating unit 2 controls solenoid control valve 12 to connect the control input 5 of the respective relay valve 3, 4 with compressed air reservoir 17, as claimed, upon energization of the solenoid control valve 12, thereby disconnecting a control pressure line 13, 14 and allowing for wheel slip control of brake pressure independent of the control pressure in line 13, 14. Therefore, with regard to claim 13, the embodiment of Fig. 2a lacks the claimed control of solenoid control valves 30, 30' in a timed manner, whereby the solenoid control valves 30, 30' are alternatively switched back and forth between a pressure buildup and pressure reduction position to carry out wheel slip control. This deficiency is due to the fact that solenoid control valves 30, 30' are in the form of proportional valves having continuously changing positions instead of 3/2-way valves having two switching positions, as claimed. However, the Examiner submits that U.S. Patent No. 6371573 (Goebels et al.) makes up for the above described deficiencies of Fig. 2a of the UK '130 reference. One of ordinary skill in the art, for obvious reasons as set forth in the rejection above, could use 3/2-way valves as taught by Goebels et al., instead of the proportional valves 30, 30' taught by the UK '130 reference in Fig. 2a. In doing so, the limitations regarding control of the respective

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solenoid control valves recited in claim 13 would also necessarily be met, as one of ordinary skill in the art would control the 3/2-way valves in a proper manner taught by Goebels et al. (see rejection above).

Applicant also points out operational differences between the invention and Goebels et al. Particularly, Applicant discusses how, in Fig. 7 of Goebels et al., 3/2-way valve 55 connects the control pressure of the brake valve 61 (as opposed to a reservoir pressure of a compressed air reservoir), in case of an ABS in a timed manner, to the control input of the relay valve 57. However, the Examiner would like to clarify that Goebels et al. is not relied upon to teach the particular operative connections of the 3/2-way valve within the brake system, but rather, is only relied upon to teach the use of a 3/2-way valve for wheel slip control. Thus, one of ordinary skill in the art would have the knowledge to replace proportional valves 30, 30' in Fig. 2a of the UK '130 reference with 3/2-way valves, while still maintaining the overall functionality of the pressure regulator module 100. In other words, one of ordinary skill in the art would not directly connect control pressure line 13, 14 with the 3/2-way valve because proportional valves 30, 30' are not directly connected to the control pressure line 13, 14. Doing so would change how the pressure regulator module 100 of Fig. 2a operates. Thus, solenoid control valve 12 should still function to connect the control input 5 of the respective relay valve 3, 4 with the compressed air reservoir 17 for wheel slip control. However, with the proposed combination, wheel slip control would be carried out by control of 3/2-way valves in a timed manner whereby the 3/2-way valve is alternatively switched back and

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forth between a pressure buildup and pressure reduction position, as taught by Goebels et al.

For the reasons set forth above, the Examiner submits that the combination of the UK '130 reference and Goebels et al. in the manner proposed above is proper and meets the all the limitations of at least independent claims 13 and 26.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VU Q. NGUYEN whose telephone number is (571)272-7921. The examiner can normally be reached on Monday through Friday, 11:30 AM to 8:00 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on (571) 272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/V. Q. N./
Examiner, Art Unit 3683

/Robert A. Siconolfi/
Supervisory Patent Examiner, Art
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